

SEQUENCE LISTING

<110> Zehentner-Wilkinson, Barbara K.
Hayes, Dawn
Houghton, Raymond L.

<120> METHODS, COMPOSITIONS AND KITS FOR THE DETECTION
AND MONITORING OF LUNG CANCER

<130> 609WO

<140> PCT
<141> 2004-03-10

<150> US 60/457,261
US 60/502,995

<151> 2003-03-24
2003-09-15

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Val Gln Leu Gln Asp Asn Gly Tyr Asn Gly Leu Leu Ile Ala Ile Asn
35          40          45
Pro Gln Val Pro Glu Asn Gln Asn Leu Ile Ser Asn Ile Lys Glu Met
50          55          60
Ile Thr Glu Ala Ser Phe Tyr Leu Phe Asn Ala Thr Lys Arg Arg Val
65          70          75          80
Phe Phe Arg Asn Ile Lys Ile Leu Ile Pro Ala Thr Trp Lys Ala Asn
85          90          95
Asn Asn Ser Lys Ile Lys Gln Glu Ser Tyr Glu Lys Ala Asn Val Ile

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<211> 236

<212> PRT

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35      40      45
Ser Ala Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Ala Pro
50      55      60
Gln Leu Arg Pro Ala Ala Asp Gly Gln Pro Ser Gly Gly Gly His Lys
65      70      75      80
Ser Ala Pro Lys Gln Val Lys Arg Gln Arg Ser Ser Ser Pro Glu Leu
85      90      95
Met Arg Cys Lys Arg Arg Leu Asn Phe Ser Gly Phe Gly Tyr Ser Leu
100     105     110
Pro Gln Gln Gln Pro Ala Ala Val Ala Arg Arg Asn Glu Arg Glu Arg
115     120     125
Asn Arg Val Lys Leu Val Asn Leu Gly Phe Ala Thr Leu Arg Glu His
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Val Pro Asn Gly Ala Ala Asn Lys Lys Met Ser Lys Val Glu Thr Leu
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Arg Ser Ala Val Glu Tyr Ile Arg Ala Leu Gln Gln Leu Leu Asp Glu
165     170     175
His Asp Ala Val Ser Ala Ala Phe Gln Ala Gly Val Leu Ser Pro Thr
180     185     190
Ile Ser Pro Asn Tyr Ser Asn Asp Leu Asn Ser Met Ala Gly Ser Pro
195     200     205
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<213> Homo sapiens

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35      40      45
Trp Lys Thr Met Ser Gly Lys Glu Lys Ser Lys Phe Asp Glu Met Ala
50      55      60
Lys Ala Asp Lys Val Arg Tyr Asp Arg Glu Met Lys Asp Tyr Gly Pro
65      70      75      80
Ala Lys Gly Gly Lys Lys Lys Asp Pro Asn Ala Pro Lys Arg Pro
85      90      95
Pro Ser Gly Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys Ile Lys
100     105     110
Ser Thr Asn Pro Gly Ile Ser Ile Gly Asp Val Ala Lys Lys Leu Gly
115     120     125
Glu Met Trp Asn Asn Leu Asn Asp Ser Glu Lys Gln Pro Tyr Ile Thr
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Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Val Ala Asp Tyr
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Lys Ser Lys Gly Lys Phe Asp Gly Ala Lys Gly Pro Ala Lys Val Ala
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 35 40 45
 Arg Phe Trp Thr Pro Gln Thr Gly Pro Gly Glu Gly Arg His Glu Arg
 50 55 60
 His Thr Gln Thr Gln Asn His Thr Ala Ser Pro Arg Ser Pro Val Met
 65 70 75 80
 Glu Ser Pro Lys Lys Lys Asn Gln Gln Leu Lys Val Gly Ile Leu His
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 Leu Gly Ser Arg Gln Lys Lys Ile Arg Ile Gln Leu Arg Ser Gln Cys
 100 105 110
 Ala Thr Trp Lys Val Ile Cys Lys Ser Cys Ile Ser Gln Thr Pro Gly
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<211> 261

<212> PRT

<213> Homo sapiens

<400> 22

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Val Met Ile Leu Val Val Ala Ala Gln Glu Val Trp Gly Asp Glu Gln
35     40     45
Glu Asp Phe Val Cys Asn Thr Leu Gln Pro Gly Cys Lys Asn Val Cys
50     55     60
Tyr Asp His Phe Phe Pro Val Ser His Ile Arg Leu Trp Ala Leu Gln
65     70     75     80
Leu Ile Phe Val Ser Thr Pro Ala Leu Leu Val Ala Met His Val Ala
85     90     95
Tyr Tyr Arg His Glu Thr Thr Arg Lys Phe Arg Arg Gly Glu Lys Arg
100    105    110
Asn Asp Phe Lys Asp Ile Glu Asp Ile Lys Lys His Lys Val Arg Ile
115    120    125
Glu Gly Ser Leu Trp Trp Thr Tyr Thr Ser Ser Ile Phe Phe Arg Ile
130    135    140
Ile Phe Glu Ala Ala Phe Met Tyr Val Phe Tyr Phe Leu Tyr Asn Gly
145    150    155    160
Tyr His Leu Pro Trp Val Leu Lys Cys Gly Ile Asp Pro Cys Pro Asn
165    170    175
Leu Val Asp Cys Phe Ile Ser Arg Pro Thr Glu Lys Thr Val Phe Thr
180    185    190
Ile Phe Met Ile Ser Ala Ser Val Ile Cys Met Leu Leu Asn Val Ala
195    200    205
Glu Leu Cys Tyr Leu Leu Leu Lys Val Cys Phe Arg Arg Ser Lys Arg
210    215    220
Ala Gln Thr Gln Lys Asn His Pro Asn His Ala Leu Lys Glu Ser Lys
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24

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27

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 <212> PRT
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 35 40 45
 Ile Asn Glu Leu Leu Asn Lys Leu Glu Leu Glu Ile Gln Tyr Gln Glu
 50 55 60
 Gln Thr Asn Asn Ser Leu Lys Glu Leu Cys Glu Ser Leu Glu Glu Asp
 65 70 75 80
 Tyr Lys Asp Ile Glu His Leu Lys Glu Asn Val Pro Ser His Leu Pro
 85 90 95
 Gln Val Thr Val Thr Gln Ser Cys Val Lys Gly Ser Asp Leu Asp Pro
 100 105 110
 Glu Glu Pro Ile Lys Val Glu Glu Pro Glu Pro Val Lys Lys Pro Pro
 115 120 125
 Lys Glu Gln Arg Ser Ile Lys Glu Met Pro Phe Ile Thr Cys Asp Glu
 130 135 140
 Phe Asn Gly Val Pro Ser Tyr Met Lys Ser Arg Leu Thr Tyr Asn Gln
 145 150 155 160
 Ile Asn Asp Val Ile Lys Glu Ile Asn Lys Ala Val Ile Ser Lys Tyr
 165 170 175
 Lys Ile Leu His Gln Pro Lys Lys Ser Met Asn Ser Val Thr Arg Asn
 180 185 190
 Leu Tyr His Arg Phe Ile Asp Glu Glu Thr Lys Asp Thr Lys Gly Arg
 195 200 205
 Tyr Phe Ile Val Glu Ala Asp Ile Lys Glu Phe Thr Thr Leu Lys Ala
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 Asp Lys Lys Phe His Val Leu Leu Asn Ile Leu Arg His Cys Arg Arg
 225 230 235 240
 Leu Ser Glu Val Arg Gly Gly Gly Leu Thr Arg Tyr Val Ile Thr
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 <213> Homo sapiens

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22

<210> 29
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<212> PRT
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Phe Leu Val Lys Thr Gly Tyr Ala Phe Val Asp Cys Pro Asp Glu Ser			
	35	40	45
Trp Ala Leu Lys Ala Ile Glu Ala Leu Ser Gly Lys Ile Glu Leu His			
	50	55	60
Gly Lys Pro Ile Glu Val Glu His Ser Val Pro Lys Arg Gln Arg Ile			
	65	70	75
Arg Lys Leu Gln Ile Arg Asn Ile Pro Pro His Leu Gln Trp Glu Val			
	85	90	95
Leu Asp Ser Leu Leu Val Gln Tyr Gly Val Val Glu Ser Cys Glu Gln			
	100	105	110
Val Asn Thr Asp Ser Glu Thr Ala Val Val Asn Val Thr Tyr Ser Ser			
	115	120	125
Lys Asp Gln Ala Arg Gln Ala Leu Asp Lys Leu Asn Gly Phe Gln Leu			
	130	135	140
Glu Asn Phe Thr Leu Lys Val Ala Tyr Ile Pro Asp Glu Thr Ala Ala			
	145	150	155
Gln Gln Asn Pro Leu Gln Gln Pro Arg Gly Arg Arg Gly Leu Gly Gln			
	165	170	175
Arg Gly Ser Ser Arg Gln Gly Ser Pro Gly Ser Val Ser Lys Gln Lys			
	180	185	190
Pro Cys Asp Leu Pro Leu Arg Leu Leu Val Pro Thr Gln Phe Val Gly			
	195	200	205
Ala Ile Ile Gly Lys Glu Gly Ala Thr Ile Arg Asn Ile Thr Lys Gln			
	210	215	220
Thr Gln Ser Lys Ile Asp Val His Arg Lys Glu Asn Ala Gly Ala Ala			
	225	230	235
Glu Lys Ser Ile Thr Ile Leu Ser Thr Pro Glu Gly Thr Ser Ala Ala			
	245	250	255
Cys Lys Ser Ile Leu Glu Ile Met His Lys Glu Ala Gln Asp Ile Lys			
	260	265	270
Phe Thr Glu Glu Ile Pro Leu Lys Ile Leu Ala His Asn Asn Phe Val			
	275	280	285
Gly Arg Leu Ile Gly Lys Glu Gly Arg Asn Leu Lys Lys Ile Glu Gln			
	290	295	300
Asp Thr Asp Thr Lys Ile Thr Ile Ser Pro Leu Gln Glu Leu Thr Leu			
	305	310	315
Tyr Asn Pro Glu Arg Thr Ile Thr Val Lys Gly Asn Val Glu Thr Cys			
	325	330	335
Ala Lys Ala Glu Glu Ile Met Lys Lys Ile Arg Glu Ser Tyr Glu			
	340	345	350
Asn Asp Ile Ala Ser Met Asn Leu Gln Ala His Leu Ile Pro Gly Leu			
	355	360	365
Asn Leu Asn Ala Leu Gly Leu Phe Pro Pro Thr Ser Gly Met Pro Pro			
	370	375	380
Pro Thr Ser Gly Pro Pro Ser Ala Met Thr Pro Pro Tyr Pro Gln Phe			
	385	390	395
Glu Gln Ser Glu Thr Glu Thr Val His Leu Phe Ile Pro Ala Leu Ser			
	405	410	415
Val Gly Ala Ile Ile Gly Lys Gln Gly Gln His Ile Lys Gln Leu Ser			
	420	425	430
Arg Phe Ala Gly Ala Ser Ile Lys Ile Ala Pro Ala Glu Ala Pro Asp			
	435	440	445
Ala Lys Val Arg Met Val Ile Ile Thr Gly Pro Pro Glu Ala Gln Phe			
	450	455	460
Lys Ala Gln Gly Arg Ile Tyr Gly Lys Ile Lys Glu Glu Asn Phe Val			

465 470 475 480
 Ser Pro Lys Glu Glu Val Lys Leu Glu Ala His Ile Arg Val Pro Ser
 485 490 495
 Phe Ala Ala Gly Arg Val Ile Gly Lys Gly Gly Lys Thr Val Asn Glu
 500 505 510
 Leu Gln Asn Leu Ser Ser Ala Glu Val Val Val Pro Arg Asp Gln Thr
 515 520 525
 Pro Asp Glu Asn Asp Gln Val Val Val Lys Ile Thr Gly His Phe Tyr
 530 535 540
 Ala Cys Gln Val Ala Gln Arg Lys Ile Gln Glu Ile Leu Thr Gln Val
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 565 570 575
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 <213> Homo sapiens

<400> 33
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<210> 34
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 <212> DNA
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<400> 34
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